

STIMULANTS

WHAT ARE STIMULANTS?

Stimulants are a group of drugs which stimulate the central nervous system. They produce an increase in alertness and activity. Caffeine (found in coffee, cola, tea, and chocolate) and nicotine (found in tobacco products) are stimulants. Others are ephedrine and phenylpropanolamine. The strongest stimulants are cocaine, amphetamines such as dextroamphetamine and methamphetamine, and methylphenidate (Ritalin).

The stimulant drugs cocaine, methamphetamine ("Ice"), nicotine (in tobacco), and caffeine are described in separate fact sheets in this series. This fact sheet will focus on other drugs in the stimulant group.

WHAT ARE THE GENERAL EFFECTS OF STIMULANTS?

Stimulants speed up heart and breathing rates, and increase blood pressure. They also reduce appetite, interfere with sleep, and increase anxiety. These effects increase with larger doses. Speech may become rapid, and reflexes may become faster.

Use of amphetamines causes a feeling of euphoria, increased alertness, and greater energy. As the drug wears off, fatigue and depression occur.

WHAT MEDICAL USES DO STIMULANTS HAVE?

Caffeine is used in some medications to help keep the user from getting sleepy. Ephedrine is in certain nasal inhalers and cold preparations. Phenylpropanolamine is in many over-the-counter "diet pills" and nasal decongestants.

Medical use of amphetamines is legally restricted in Michigan to treating certain rare sleep disorders. Ritalin is used in the treatment of chil-

dren with attention deficit and attention deficit hyperactivity disorders.

WHAT LEGAL NON-MEDICAL USES ARE THERE FOR STIMULANTS?

Some of these drugs have legal non-medical uses. Caffeine is found in coffee, tea, many soft drinks, and chocolate. It is used in products to keep the user awake. Nicotine is the active, addicting chemical found in tobacco products. Though legal, such use can cause health problems.

WHAT RISKS OCCUR WITH STIMULANTS?

Overuse and abuse can occur with all of the stimulant drugs. Caffeine dependency can develop. Nicotine dependency leads to serious health damage and death. "Diet" pills can be abused with serious health problems.

Decongestants and "diet" pills containing phenylpropanolamine elevate blood pressure. For some sensitive users, a dose just three times the normal dose can be fatal.

Caffeine increases blood pressure and can cause rapid, irregular heart-beat. Even caffeine can on rare occasions cause an overdose which can result in seizures, respiratory failure, and death.

Risks caused by methamphetamines are described in a separate fact sheet in this series. Risks that occur with amphetamines are described below.

WHAT IMMEDIATE RISKS ARE ASSOCIATED WITH AMPHETAMINES?

Even small, infrequent doses of amphetamines can produce risky effects in some people. These include restlessness, anxiety, mood swings, panic, paranoid thoughts, and hallucinations. High blood pressure, rapid

or irregular heart beat, convulsions, coma, stroke, and heart failure may occur. Death can result from amphetamine overdose. The risk is greatest when the drug is injected.

In high doses, amphetamines and cocaine can cause psychotic episodes.

Use of these drugs increases self confidence which may lead to risky behavior. Lack of sleep can cause slowed reaction time and reduced watchfulness. These factors may lead to injury or death in traffic crashes, for instance.

WHAT LONG-TERM RISKS OCCUR WITH AMPHETAMINES?

Heavy, frequent doses of amphetamines can produce brain damage, resulting in speech disturbances and difficulty in turning thoughts into words. The larger and more frequent the doses, the greater these risks.

Chronic amphetamine users frequently neglect their diet, resulting in low resistance to illness and infections, malnutrition, skin disorders, ulcers, and diseases resulting from vitamin deficiency. Lack of sleep and weight loss often occur. Long-term users may also have acne resembling a measles rash, and dry brittle hair. They may have trouble with teeth, gums, and nails.

Users who inject these drugs are at risk for life-threatening diseases such as HIV/ AIDS, lung and heart diseases, other cardiovascular diseases, and hepatitis.

Amphetamine users often take sleeping pills or alcohol to try to relieve the insomnia that follows amphetamine use. They may then take amphetamines again to shake off the drowsiness caused by these depressants. This up and down cycle is very hard on the body. It also increases the chance of an unintended overdose.

Large doses can result in amphetamine psychosis. People in this state are suspicious and paranoid. They often show bizarre or violent behavior. Frequent heavy use of the drug can cause mental illness, suicide, and death.

CAN USERS BECOME DEPENDENT ON AMPHETAMINES?

Regular use, even at low doses, can cause dependency. Those who use amphetamines regularly at high doses are at greater risk to become dependent.

Dependent users feel that they need the drug to get by. Withdrawal symptoms occur if use is stopped. They often keep taking amphetamines to avoid the "down" mood they feel when the drug wears off.

HOW COMMON IS STIMULANT USE?

Stimulant use has been increasing among US teens since 1991. In 1997, stimulants had been used in the past year by 8.1% of eighth graders, 12.1% of tenth graders, and 10.2% of twelfth graders. Stimulants had been used in the past month by 3.8% of eighth graders, 5.1% of tenth graders, and 4.8% of twelfth graders.

According to the 1996 National Household Survey, among US youth aged 12 to 17, 2.2% had used stimulants in their lifetime, 1.5% had used in the past year, and .5% had used stimulants in the past month. Current use (in the past month) among teenagers is very near the same rate as that for young adults aged 18-25.

WHAT PROBLEMS ARE CAUSED BY AMPHETAMINE AND OTHER STIMULANT USE DURING PREGNANCY?

All stimulants, even caffeine, can affect the mother's sleeping and eating habits. These influence the mother's general health and the growth and development of the fetus. The United States Food and Drug Administration has issued a warning about the possible adverse effects of caffeine on the fetus.

Amphetamines used during pregnancy cross the placenta and affect the fetal heart rate and blood flow. Exposure to these drugs has been linked to brain abnormalities. Birth defects in the heart, urogenital system, and liver can occur. Cases of newborns suffering withdrawal symptoms have been reported. Studies suggest that children exposed to amphetamines before birth are very excitable.

Women who are pregnant, considering pregnancy, or breast-feeding should not use amphetamines. A pregnant woman should discuss use of any stimulants, including coffee and nicotine, with her physician.

LEGAL INFORMATION

There are no legal restrictions on the sale or use of caffeine, or over-the-counter preparations that contain stimulants.

Amphetamines, methamphetamine, methylphenidate, and other stimulants described in this fact sheet are classified as Controlled Substances by Michigan and federal law. Use, possession, delivery, possession with intent to deliver, and manufacture of the drug are all illegal without

SOURCES:

Indiana Clearinghouse. *Amphetamines*. 1991.

Johnston et al *Monitoring the Future Study*, 1997 data. Prev-Line website. University of Michigan press release December 20, 1997. Table 1b.

Johnston, et al *Monitoring the Future Study*, 1996 data. University of Michigan press release December 19, 1996. Table 1.

US Department of Health and Human Services. National Household Survey on Drug Abuse: Population Estimates 1996. Table 9a, Page 59.

US Department of Labor. *What Works: Workplaces Without Drugs*. 1991, page 59.

Wisconsin Clearinghouse. "OTCs" 1991. Page 7.

Wisconsin Clearinghouse. *Caffeine*. 1991. Page 3.

appropriate license or prescription .

Penalties include imprisonment and fines. Certain penalties are mandatory. Penalties are increased if a person eighteen years or older distributes the drug to a person under eighteen, or distributes the drug near school property.

For details on the legal penalties on these and other stimulants, refer to the Michigan Law Fact Sheet in this series.



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